CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION

ORDER NO. 89-171 NPDES NO. CA0037541

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

CITY OF SAN MATEO SAN MATEO, SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter the Board) finds that:

- 1. The City of San Mateo, hereinafter Discharger, submitted a report of waste discharge dated March 13, 1989 for reissuance of NPDES Permit No. CA0037541.
- The Discharger presently discharges an average dry weather flow of about 10.2 million gallons per day (mgd) during 1988 from its tertiary-level treatment plant which has a current dry weather design capacity of 13.6 mgd. The Discharger provides secondary treatment during the winter months (October - April) and tertiary-level treatment during the summer months (May - September). Treatment facilities consist of primary clarifiers, aeration tanks, final clarifiers, pressure filters (May - September), and chlorination and dechlorination. This plant treats domestic and commercial wastewater from the City of San Mateo, the City of Foster City, the Town of Hillsborough, and portions of the City of Belmont and unincorporated San Mateo County. The treated wastewater is discharged into the deep water channel of lower San Francisco Bay, a water of the State and United States, at a point approximately 500 feet north of the San Mateo-Haywood Bridge through a submerged diffuser about 3700 feet offshore at a depth of 41 feet below mean lower low water (Latitude 37 deg., 34 min., 50 sec.; Longitude 122 deg., 14 min., 45 sec.). The discharge could affect viable shellfish beds in San Francisco Bay located within the vicinity of the Discharger's outfall.
- 3. The discharge is presently subject to NPDES Permit No. CA0037541 (Order No. 84-69, adopted on October 17, 1984) which allows discharge into San Francisco Bay.
- 4. The Discharger will request an increase in authorized capacity from 13.6 mgd to 15.7 mgd. This request will be based on sewerage treatment facility improvements which are currently being designed and are scheduled to be completed by 1993.
- 5. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 17, 1986, and the State Water Resources Control Board (SWRCB) approved it on May 21, 1987.
- 6. The Basin Plan contains water quality objectives for lower San Francisco Bay and contiguous waters. The beneficial uses of lower San Francisco Bay and contiguous waters are:

Water Contact Recreation
Non-contact Water Recreation
Wildlife Habitat
Preservation of Rare and Endangered Species
Estuarine Habitat
Fish Migration and Spawning
Industrial Service Supply
Shellfish Harvesting
Navigation
Commercial and Sport Fishing

- 7. The Regional Board's Shellfish Program identified major shellfish beds existing along the San Mateo Foster City shoreline. During the summers of 1982, 1983, and 1985, some of these beds were opened for direct recreational harvesting. Stringent dry weather effluent limits are required to protect this beneficial use.
- 8. Shellfish beds in this area are affected by overflows from the collection system and by other sources of contaminants, such as storm drains, creeks, and lagoon discharges and can be affected by the Discharger's effluent. During wet weather, receiving water coliform objectives are frequently violated in these beds due to the presence of large volumes of contaminated surface runoff.
- 9. Protection of shellfish harvesting as a beneficial use during wet weather will not be possible unless significant resources are devoted to improved control and/or treatment of contaminated runoff. Until such improvements are achieved, the quality of waters overlying the shellfish beds during wet weather will most often be controlled by the amount and type of runoff received, not the Discharger's effluent quality.
- 10. During wet weather, raw sewage overflows may occur when sewer system and pump station capacity is exceeded as a result of excessive infiltration or inflow of rainfall runoff or as a result of pump station failures. Any such overflow is a violation of the requirements of this Order.
- 11. An Operation and Maintenance Manual is maintained by the Discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, facilities, recommended operation strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, the manual should be kept updated to reflect significant changes in treatment facilities or operational procedures.
- 12. The Discharger has implemented and is maintaining an EPA approved Local Pretreatment Program for source control and application of pretreatment standards.
- 13. This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.
- 14. The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided with the opportunity for a public hearing and opportunity to submit their written views and recommendations.

15. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act as amended and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

- 1. Discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1 is prohibited.
- 2. Bypass or overflow of untreated or partially treated wastewater to waters of the State either at the treatment plant or from any of the collection or transport system or pump stations tributary to the treatment plant or outfall is prohibited.
- 3. The average dry weather flow shall not exceed 13.6 mgd. This average shall be determined over three consecutive dry weather months each year. If the Discharger submits engineering reports for increased effluent discharge to satisfy requirements and demonstrates adequate performance, reliability, and capacity of the completed improvements to the satisfaction of the Executive Officer, treatment plant capacity may be increased up to 15.7 mgd in accordance with Finding #4 above.

B. Effluent Limitations

1. During the months of May through September the following effluent limitations shall apply:

	Constituents	<u>Units</u>	Monthly Average	Weekly Average (2)	Maximum Daily	Instan- taneous Maximum
a.	Settleable Matter	ml/l-hr	0.1	****		0.2
b.	BOD ₅	mg/1	10	15	20	
c.	Total Suspended					
	Solids	mg/l	8	12	16	
d.	Oil & Grease	mg/1	10		*********	20
e.	Total Chlorine					
	Residual (1)	mg/l				0.0
f.	Turbidity	NTU	10		20	Print 1-1-2- 1-1-1-1

- (1) Requirement defined as below the limit of detection in standard test methods.
- (2) See effluent limits in B.2. if four or more days fall in October or April.
- 2. During the months of October through April the following effluent limitations shall apply:

	Constituents	<u>Units</u>	Monthly Average	Weekly Average	Maximum Daily	Instan- taneous <u>Maximum</u>
a.	Settleable Matter	ml/l-hr	0.1		W4 140 440	0.2
b.	BOD ₅	mg/1	30	45	60	
C.	Total Suspended					
	Solids	mg/1	30	45	60	<u></u>
đ.	Oil & Grease	mg/l	10			20
e.	Total Chlorine					
	Residual (1)	mg/1	**********		<u></u>	0.0
f.	Turbidity	NTU	15		30	

- (1) Requirement defined as below the limit of detection in standard test methods.
- 3. The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and suspended solids values, by weight for effluent samples collected in a calendar month shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period (85 percent removal).
- 4. The pH of the discharge shall not exceed 9.0 nor be less than 6.0.
- 5. The survival of test organisms acceptable to the Executive Officer in 96-hour bioassays of the effluent shall achieve a 90 percentile value of not less than 50% survival based on the ten most recent consecutive samples.
- 6. Representative samples of the effluent shall not exceed the following limits (1):

Constituents	<u>Units</u>	Daily <u>Maximum</u>
a. Arsenic	ug/l	200
b. Cadmium	ug/l	30
c. Chromium(VI) (2)	ug/l	110
d. Copper	ug/l	200
e. Lead	ug/l	56
f. Mercury	ug/l	1
g. Nickel	ug/l	71.
h. Silver	ug/l	23
i. Zinc	ug/l	580
j. Cyanide	ug/l	25
k. Phenols	ug/l	500
1. Polynuclear Aromatic	;	
Hydrocarbons (3)	ug/l	150
m. Selenium (4)	ug/l	

(1) These limits are based on a combination of fresh and salt water quality objectives, technological achievability, limits of detection, and limited allowance for dilution. These limits are intended to be achieved through a combination of Best Available Technology, secondary treatment, source control, and application of pretreatment standards.

- (2) The Discharger, at its option, may meet this limit as total chromium.
- (3) As identified by EPA Method 610. If a discharge exceeds the limit for PAHs, concentrations of individual constituents should be reported.
- (4) Selenium limitation to be established.
- 7. During the months of May through September inclusive, the moving median value for the Most Probable Number (MPN) of total coliform in any seven (7) consecutive effluent samples shall not exceed 2.2 coliform organisms per 100 milliliters. Any single sample shall not exceed 240 MPN/100 ml. During the wet weather months of October through April inclusive, the moving median value for the Most Probable Number (MPN) of total coliform in any five (5) consecutive effluent samples shall not exceed 23 coliform organisms per 100 milliliters. Any single sample shall not exceed 240 MPN/100 ml. The Discharger shall calculate the seven day moving median coliform values starting with the seventh sample in May.

C. Receiving Water Limitations

- 1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulated matter or foam;
 - b. Bottom deposits or aquatic growths;
 - c. Alteration of temperature, turbidity, taste, odor, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;
 - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
- 2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:
 - a. Dissolved oxygen
- 5.0 mg/l minimum. Median of any three consecutive months shall not be less than 80% saturation. When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.

b. Dissolved sulfide 0.1 mg/l maximum

c. pH Variation from natural ambient pH by more

than 0.5 pH units.

d. Un-ionized ammonia 0.025 mg/l as N Annual Median

0.4 mg/l as N Maximum

3. The discharger shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Sludge Requirements

- 1. Permanent sludge storage or disposal activities are not authorized by this permit. A Report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencing any such activity.
- 2. The treatment, disposal, storage, or processing of sludge shall not create a condition of pollution or nuisance as defined in Section 13050(1) and (m) of the California Water Code.
- 3. The treatment, disposal, storage, or processing of sewage sludge shall not cause waste material to be in any position where it is, or can be, carried from the sludge treatment, disposal, storage, or processing site and be deposited in waters of the State.
- 4. Any sludge treatment, disposal, storage, or processing site shall have facilities adequate to divert surface runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the disposal site to escape from the site. Adequate protection is defined as protected from at least a 100-year storm and from the highest tidal stage that may occur.
- 5. The direct or indirect discharge of sludge waste to waters of the State is prohibited.
- 6. Sludge management and disposal practices shall comply with all current state and EPA regulations, including 40 CFR 257.
- 7. This permit may be reopened to include sludge management requirements promulgated under Section 405(d)(2) of the Clean Water Act, provided that the existing permit contains less stringent sludge management requirements.
- 8. The Discharger shall provide written notice to the Regional Board at least 90 days prior to making any significant changes in sludge disposal

practices.

E. Provisions

- 1. The requirements prescribed by this Order supersede the requirements prescribed by Order No. 84-69. Order No. 84-69 is hereby rescinded.
- 2. Where concentration limitations in mg/l or ug/l are contained in this permit, the following mass emission limitations shall also apply:
 - Mass Emission Limit (in lbs/day or kg/day) = Concentration Limit in $mg/l \times (8.34 \text{ or } 3.79) \times \text{Actual Flow in } mgd \text{ averaged over the time interval to which the limit applies.}$
- 3. The Discharger shall comply with all sections of this Order immediately upon adoption.
- 4. The Discharger shall submit a technical report on wet-weather overflows from its collection system by February 1, 1991. The report shall identify all overflow locations, overflow frequency and volume for each location, and proximity of schools, hospitals, and other sensitive uses for each location. The report shall identify collection system repairs, improvements, and replacements needed to reduce or eliminate wetweather overflows, including cost and schedule information. Annual progress reports shall be submitted to the Board by February 1 each year starting in 1992. The progress reports shall quantify any sewerage system improvements and their impacts on compliance, wet weather flow quantity, overflow/bypass frequency, and summarize proposed actions for the coming year.
- 5. The Discharger shall review and update its Operations and Maintenance Manual annually, or in the event of significant facility or process changes, shortly after such changes have occurred. Annual revisions, or letters stating that no changes are needed, shall be submitted to the Regional Board by April 15 of each year. Documentation of operator input and review should accompany each annual update.
- 6. The Discharger shall review and update annually its contingency plan as required by Board Resolution No. 74-10. Annual revisions, or letters stating that no changes are needed, shall be submitted to the Regional Board by April 15 of each year. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or implement a contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.
- 7. The Discharger shall implement and enforce its approved pretreatment program in accordance with Regional Board Order No. 84-60 and its amendments thereafter. The Discharger's responsibilities include, but are not limited to:
 - a. Enforcement of national pretreatment standards (e.g., prohibited discharges, categorical standards, local limits) in accordance with 40 CFR 403.5 and Section 307(B) and (C) of the Clean Water Act.
 - b. Implementation of the pretreatment program in accordance with the legal authorities, policies, procedures, and financial provisions

described in the general pretreatment regulations (40 CFR 403) and the Discharger's approved pretreatment program including subsequent modifications to the program.

- c. Submission of annual and quarterly reports to EPA and the State as described in Board Order 84-60 and its amendments thereafter.
- 8. The Discharger shall comply with the attached self-monitoring program. The Executive Officer may make minor amendments to it pursuant to federal regulations (40 CFR 122.63).
- 9. The Discharger shall comply with all applicable items of the attached "Standard Provisions and Reporting Requirements," dated December, 1986.
- 10. This Order expires on November 15, 1994. The Discharger must file a Report of Waste Discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.
- 11. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after the date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Steven R. Ritchie, Executive Officer do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on November 15, 1989.

STEVEN R. RITCHIE Executive Officer

Attachments:

Standard Provisions & Reporting Requirements, December 1986 Self-Monitoring Program Resolution 74-10

[File No. 2179.7035A] [Originator/JMJ] [Reviewer/SAH]

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR

CITY OF SAN MATEO
SAN MATEO
SAN MATEO COUNTY
NPDES NO. CA 0037541
ORDER NO. 89-171
CONSISTS OF
PART A, dated December 1986
AND

PART B

PART B

CITY OF SAN MATEO

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT AND INTAKE

	Station	Description
	A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present, preceding any phase of treatment, and exclusive of any return flows or process sidestreams.
в.	EFFLUENT	
	Station	Description
	E-001	At any point in the treatment facilities between the point of discharge and the point at which all waste from the treatment plant is present following dechlorination.

At any point in the treatment facilities at which point adequate contact with the

C. RECEIVING WATERS

E-001-D

Station	Description
C-1	At a point in San Francisco Bay, located over the geometric center of the visible effluent plume.
C-2	At a point in San Francisco Bay, located 50 feet southwesterly, along the outfall line shoreward from Station C-1.
C-3	At a point in San Francisco Bay, located 50 feet northwesterly from Station C-1, normal to the outfall line.
C-4	At a point in San Francisco Bay, located 50 feet northeasterly from Station C-1, along the outfall line extended.
C-5	At a point in San Francisco Bay, located 50 feet southeasterly from Station C-1, normal to the outfall line.
C-R	At a point in San Francisco Bay, located in the main ship channel not closer than 2,000

disinfectant is assured.

feet upcurrent from the outfall or midchannel opposite Channel Marker No. 8.

D. LAND OBSERVATIONS

Station

Description

P-1 through

P-'n'

Located along the periphery of the waste treatment or disposal facilities, at equidistant intervals, not to exceed 500 feet. (A sketch showing the locations of these stations will accompany each report.)

E. OVERFLOWS AND BYPASSES

Station

Description

OV-1 through OV-'n' Bypass or overflows from manholes, pump stations, or collection systems.

REPORTING - Shall be submitted monthly and include date, time, quantity, and period of each overflow or bypass and measures taken or planned to prevent future occurrences (see Part A, Section G.2.)

II. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS

The schedule of sampling, analysis, and observations shall be that given as Table I.

- I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:
- 1. Has been developed in accordance with the procedure set forth in the Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 89-171.
- 2. Is effective on the date shown below.
- 3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger and revisions will be ordered by the Executive Officer.

STEVEN R. RITCHIE Executive Officer

Effective Date 11/15/89

Attachments:

Table I and Footnotes
Part A, December 1986
Map - Receiving Water Sampling Stations

TABLE 1 (1)
JG. MEASUREMENTS, AND ANALYSIS . Order No. 89-171

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS												
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TYPES OF SAMPLES

G = grab sample

C-24 = composite sample - 24-hour

Cont = continuous sampling

0 = observation

TYPES OF STATIONS

A = treatment facility influent stations

E = waste effluent stations

C = receiving water stations

P = treatment facilities perimeter stations

2H = every 2 hours

2D = every 2 days 2W = every 2 weeks 3M = every 3 months

Cont = continuous

OV = overflows and bypasses

Misc. Obsv. = Miscellaneous Observations

FREQUENCY OF SAMPLING

E = each occurence

H = once each hour

D = once each day

W = once each week

M = once each month

2/H = twice per hour

2/W = 2 days per week

5/W = 5 days per week

2/M = 2 days per month

2/y = once in March and once in September

Q = quarterly, once in March, June, Sept. and December

FOOTNOTES

- During any day when bypassing occurs from any treatment unit(s) in the plant or to the emergency outfall, the monitoring program for the effluent and any nearshore discharge shall include the following in addition to the above schedule for sampling, measurement and analyses:
 - 1. Composite sample for BOD and Total Suspended Solids (Unless regular 24-hour composite samples are available, sampling shall consist of one grab sample during the first two hours of bypassing and grab samples every four hours afterward for the duration of the bypass. The grab samples will be combined on a flow-proportioned basis and analyzed as a composite sample.)
 - 2. Grab samples for Total Coliform, Settleable Matter, Oil and Grease, and chlorine residual (continuous or every two hours).
 - 3. Continuous monitoring of flow.
- 2/ The twice per month effluent oil and grease sampling shall consist of one grab sample taken at peak flow. The other effluent oil and grease value shall be determined by 3 grab samples taken at 8-hour intervals during the sampling day with each grab being collected in a glass container and analyzed separately. Results shall be expressed as a weighted average of the 3 values, based upon the instantaneous flow rates occurring at the time of each grab sample. Only the weighted average of the 3 values will be used to determine mass loading to the Bay. If the plant is not staffed 24 hours per day or if the discharge does not occur continuously, then the three grab samples may be taken at approximately equal intervals during the period that the plant is staffed or during the period that discharge is made.

In the event that sampling for oil and grease once every two weeks or less frequently shows an apparent violation of the waste discharge permit monthly average limitation (considering the results of one or two day's sampling as a monthly average), then the sampling frequency shall be increased to weekly so that a true monthly average can be computed and compliance can be determined.

- 3/ Grab samples shall be taken on day(s) of composite sampling.
- 4/ If any sample is in violation of limits, sampling shall be increased for that parameter to weekly until compliance is demonstrated in two successive samples.
- 5/ Data shall be reported using forms provided or approved equivalent. Chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, grab samples shall be taken every 30 minutes until compliance is achieved.
- 6/ Compliance with the effluent toxicity requirement shall be determined using two test species in parallel flow-through bioassays. One shall be three-spine stickleback, and the other shall be either rainbow trout or fathead minnow.

- 7/ These parameters shall be tested for on the same sample(s) used for the bioassay(s) prior to starting the flow-through bioassay(s) and at intervals of 24, 48, 72, and 96 hours after starting the flow-through bioassay(s).
- 8/ Daily records shall be kept of the quantity and solids content of dewatered sludge disposed of and the location of disposal.
- 9/ Sampling shall be coordinated to be on the same date and approximate time as for 1) the South Bayside System Authority and the North Bayside System Unit receiving water monitoring, and 2) routine grab and composite effluent monitoring.
- 10/ Regional Board and San Mateo County Health Department staff shall be immediately notified by telephone of any bypass or overflow that may affect shellfish beds during periods when such beds are legally open for harvesting.
- 11/ The Executive Officer may consider reducing this monitoring frequency two years after the adoption of this permit if self-monitoring results demonstrate that the effluent consistently meets the Table IV-1 effluent limits by a reasonable margin. A reduction after two years therefore will not require a permit amendment.